

REMARKS

Reconsideration of the above-identified patent application, as amended, is respectfully requested.

Applicant has herein filed the formal drawings thereby responding to the objection of the drawings. Further, objection was taken to the drawings of "a sump, a reservoir" not being shown in the drawings. The formal drawings show in Fig. 1 a symbolic area identified by item 24 that stands for the conventional sump, engine crankshaft and oil reservoir as discussed in the fifth paragraph of page 2 of the specification. Applicant notes that in the informal drawings item 24 was shown; however, the area was not enclosed as shown in the formal drawings.

Claims 1 and 16 have been rejected under 35 USC 112 as being indefinite in that the bores are provided with a first end opening on a first side of the body. Claim 1 has been amended to positively recite that the body has a first side with the bores then having a first end opening on the first side. It is believed such language is definite. Claim 16 has been cancelled.

Claim 12 has also been rejected under 35 USC 112 regarding the means clause; however, claim 12 has been amended to delete the language referring to the means.

The remaining claims have been rejected under the prior art. More specifically, the examiner has rejected the claims based on US4758130, which is the name of the present inventor and referred to on page 1 of the present application by way of the UK equivalent GB2178110. US'130 was provided as an alternative for conventional piston type oil pumps, whereas the present invention has been developed as an alternative to conventional gear pump arrangements, that become increasingly inefficient through use

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by the gear teeth wearing down. The spatial requirements imposed upon conventional gear pump arrangements are particularly tight and thus the dimensions of any new pump are restricted.

US'130 discloses the use of a plurality of plates which are machined to provide bores and galleries such that, when the plates are arranged for use, fluid conduits are formed. By the nature of such machining processes, the bores can only be made to curve about a single axis. The applicant has invested significant time and effort in the development of a pump arrangement which overcomes these limitations by the provision of a cast body as disclosed on page three of the specification. A cast body allows conduits to be formed that can bend about two or three axes in a manner not possible with the US'130 pump arrangement. Thus, the pumped fluid is not forced to pass around right angle corners, improving the flow characteristics and efficiency of the device.

In addition the engagement of multiple plates within the device of US'130 means that the feed and scavenge pumps must be aligned in the plane of the plates, forcing the inlets/outlets to be offset from the pumps such that the fluid has to pass around to corners to enter the feed and scavenge pump chamber. The cast body of the present invention advantageously allows the feed and scavenge pumps to be provided in a different orientation such that the dimensions of the device can be altered to meet spatial requirements in a manner which has been hitherto impossible. The orientation of the pump as now claimed provides further benefits in that the pumps are no longer required to be directly driven by the engine shaft and a gearing (see Fig. 1 of the present application) can be provided to control the flow rate of the pumps. The flow rates of the

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US'130 device are controlled entirely by the dimensions of the lobe pump members making it difficult if not impossible to achieve certain specific operating conditions.

The provision of a cast body member and the benefits derived from being able to arrange the pumps as now claimed are neither disclosed nor even suggested by US'130 or any other prior art documents.

For the above reasons, it is believed the present application is in condition for allowance and such action by the Examiner is respectfully requested.

Respectfully submitted,

By



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